August 2001

Ghana

Following a severe energy crisis in 1997/1998, Ghana currently is seeking to expand and diversify its energy sources. Ghana will be the main recipient of gas from the proposed West African Gas Pipeline, which would deliver natural gas from Nigeria to markets in Benin, Togo, Ghana and Cote d'Ivoire.

Note: The information contained in this report is the best available as of August 2001 and is subject to change.

GENERAL BACKGROUND

Ghana gained its independence from Britain on March 6, 1957. It then experienced several military coups and remained under military rule for much of the period until 1992, when a new constitution was established and Jerry John Rawlings was elected president. On December 7, 1996, President Rawlings was re-elected to a second four-year term, receiving 57% of the votes. Under the constitution, President Rawlings was unable to seek another term in office. John Kufuor, the candidate of Ghana's main opposition party (National Patriotic Party-NPP), was the declared winner of the December 2000 presidential elections. Kufuor defeated the ruling party's (National Democratic Convention-NDC) candidate, Vice President John Atta Mills in a closely contested race.

Ghana's economy is heavily reliant on agriculture and mining. Agriculture, forestry and fishing constitute over 40% of the country's gross domestic product (GDP). Exports of gold and cocoa are the primary sources of government revenue and foreign exchange. In 2000, gold accounted for 31% and cocoa for 24% of export revenues, respectively. The Ghanaian economy experienced steady growth, with real GDP growth averaging 4.4%, from 1996-1999. Depressed prices for its main commodities, coupled with a rise in world petroleum prices, government budgetary problems, and a depreciation of

Ghana's currency (cedi), resulted in a meager 1.0% growth in GDP in 2000. Inflation, which had fallen from 46.6% in 1996 to 12.4% in 1999, more than doubled (25.2%) in 2000.

While Ghana's most recent economic problems are due mainly to external forces, the government is taking a proactive stance in reducing poverty and corruption, accelerating agricultural development and encouraging higher value-added processing of agricultural and mineral commodities. The government is also promoting the expansion of several non-traditional exports including cotton, cashews, tuna, handicrafts and textiles. The government plans to undertake additional measures to help improve Ghana's economic situation, including cutting government expenditures, overhauling revenue collection, instituting anti-corruption measures, and continuing the privatization of state enterprises. Several reforms enacted or planned will affect Ghana's energy sector. In March 2001, the government removed the subsidies on petroleum products put in place by the previous administration. The action resulted in a 64.3% increase in fuel prices. The prices of utility services (electricity and water) also have been raised.

The economic and structural reforms Ghana is implementing have the support of the IMF and the World Bank. The Executive Board (Board) of the IMF completed the third review of Ghana's arrangement under the Poverty Reduction and Growth Facility (PRGF) in June 2001. The Board also approved an increase of about $46 million in the amount available to Ghana under the arrangement. As a result, Ghana will be able to draw up to $66 million from the arrangement immediately. Ghana's three-year program was originally supported under the Enhanced Structural Adjustment Facility (ESAF) approved in May 1999 for $193 million. The ESAF was increased to $239 million in August 2000. So far, Ghana has drawn about $89 million under the arrangement. Through the International Development Association (IDA) loan window, the World Bank currently finances several projects in Ghana in the areas of energy, infrastructure, environment and social services. In March 2001, Ghana applied for debt relief under the IMF/World Bank debt forgiveness program for highly indebted poor countries (HIPC). In addition to agreements with the World Bank and the IMF, Ghana maintains positive relations with many other multilateral and bilateral donors. In May 2001, the African Development Bank (AfDB) approved a $50.4 million loan to support the economic reform operation in Ghana.

OIL

Ghana's estimated 16.5 million barrels of recoverable oil reserves are located in five sedimentary basins -- Tano Basin, Saltpond Basin, Accra/Keta Basin, Voltaian Basin, and the Cape Three Points Basin. Exploration offshore Ghana began in the 1970's and discoveries were made in water off western Ghana (South Tano-1978) and central Ghana (Saltpond-1977). Phillips, the discoverer of the South Tano field, made a second find with the North Tano field in 1980. Although significant gas reserves were found in the Tano fields, Phillips deemed the finds commercially unviable, and relinquished them in 1982.

The Ghana National Petroleum Company (GNPC), the parastatal primarily responsible for the importation of crude and petroleum products, subsequently assumed operations of the Tano and Saltpond fields. The GNPC announced, in December 2000, that production of an estimated 2,000 barrels per day (bbl/d) of crude oil from the Saltpond field had resumed. Production from this portion of the Saltpond field was originally curtailed in 1985. The Kufuor administration is currently involved in the restructuring of GNPC. When completed, GNPC's activities will focus solely on the exploration of Ghana's hydrocarbon resources.

Ghana's government awarded three offshore exploration blocks in early 1997. U.S.-independent Hunt Oil was awarded Ghana's first deepwater block, the Cape Three Points Southwest (CTPSW). In January 2000, results from the first well drilled on CTPSW were announced. The WCTP-2X well encountered a thin oil column holding sweet (low sulfur) crude with an API gravity of 25º. Hunt spokesman stated that, unfortunately, the find was non-commercial.

The Cape Three Points East Block (CTPE) went to a consortium consisting of Nuevo Energy (Nuevo) of the United States (75% and Operator) and SK Corp. (formerly Yukong) of South Korea (25%). Nuevo was awarded an additional block, the 1.9-million acre Accra-Keta Permit (AKP), in December 1997. In September 1998, it was reported that the NECTP-1X well, the first drilled on CTPE, was plugged and abandoned after encountering non-commercial hydrocarbon shows. Nuevo and its partner relinquished the rights to CTPE in the first quarter of 2000. In November 2000, Nuevo announced that it had transferred a 25% interest in AKP to an undisclosed, U.S.-based partner. SK Corp. and the Korean National Oil Corp. (KNOC) acquired a 25% share of AKP (12.5% each) in 2001, reducing Nuevo's equity to 50%. Nuevo began drilling (the NAK-1 well) on the AKP in January 2001. Nuevo announced, in March 2001, that it has plugged and abandoned the NAK-1 well as a dry hole. The well was drilled in 1,021 feet of water to a total depth of 10,100 feet. In July 2001, Nuevo announced the relinquishment of the AKP offshore Ghana. AKP was relinquished prior to the commencement of the second phase of the work program.

A consortium of United Kingdom firms, Dana Petroleum (Dana) and Seafield Resources (later acquired by Dana), was awarded the Cape Three Points West block (CTPW). Dana also holds a 90% interest in Ghana's offshore West Tano Contract Area (WTCA). In March 2000, Dana and GNPC (which holds the remaining 10% share) announced the discovery of oil in the WTCA, with a flow rate of up to 1,000 bbl/d. Following Dana's analysis of seismic data, to gauge the commercial feasibility of the discovery, GNPC may elect to increase its working interest to 25% during the commercial development phase. Additional drilling and seismic work are planned for the WTCA.

Devon Energy (Devon, formerly Santa Fe Snyder) signed an exploration agreement for Block 6 (Volta River estuary) in June 1997. Devon also was awarded the right to explore for hydrocarbons on the offshore Keta Block with a 90% interest and operator, with the GNPC holding 10%. In October 2000, U.S.-firm Anadarko Petroleum Corp. acquired half of Devon's equity on the Keta Block. An exploration well, Dolphin, was drilled on the Keta Block in the first quarter of 2001. Devon announced that the Dolphin well was unsuccessful, but other prospects in deeper water on the block will be explored.

Australia's Fusion Oil (Fusion) holds the exploration rights for the North Tano Contract Area (NTCA). NTCA covers acreage both onshore and offshore Ghana. Fusion announced in May 2001, the commencement of drilling on an onshore portion of the NTCA. It was reported, by the local media, that oil exploration had begun in the country's Western Region. A well, Tikobo-1, was drilled in the Jomoro district of the Western Region in early 2001. West Oil Ghana Pty. Ltd. (a wholly-owned subsidiary of Fusion) is the operator of the Tikobo project on the behalf of the GNPC.

Refining and Downstream Oil Activities

Ghana's refining facilities consist of the 45,000 bbl/d Tema Oil Refinery (TOR), located in the Greater Accra Region. TOR primarily processes imported Bonny Light/Brass River crudes from Nigeria, and produces a variety of refined products for domestic consumption and export. TOR's refining capacity was expanded from 25,000 bbl/d to the current 45,000 bbl/d in 1997, and the GNPC has plans for additional refinery upgrades. In February 1999, the GNPC signed a $185-million contract with South Korea's Samsung to build a residual fluid cracking tower at the TOR. The project is scheduled to be completed in 2002, and will help boost TOR's production of gasoline and distillates. The government plans to renegotiate the contract for the second phase of the TOR expansion project.

In November 2000, the Rawlings government signed an agreement to import 50,000 bbl/d of crude oil from Equatorial Guinea. An agreement was reached in March 2001 to import 30,000 bbl/d of crude oil from Nigeria. Libya also has agreed to begin emergency deliveries of 30,000 bbl/d of crude oil to Ghana. The crude oil will be refined at TOR and burned directly at the thermal power plant located in Aboadze. Low foreign exchange reserves and high world oil prices have weakened the ability of TOR

to purchase crude oil. The unfavorable exchange rate, coupled with subsidized product prices, saw TOR's debt rise to an estimated $350 million by March 2001.

Several foreign oil companies and local firms are involved in the distribution and marketing of refined products in Ghana. Royal Dutch/Shell (Shell) is the largest operator in the downstream retail sector. Other companies involved in the marketing of petroleum products in Ghana include the state-owned Ghana Oil Company (GOIL), ExxonMobil, TotalFinaElf, Nigeria's Unipetrol and the South African firm Engen. The state-owned Bulk Oil Storage and Transportation Company (BOST) operates fuel depots located in Ghana. The Kufuor government has dismantled BOST's corporate structure and BOST is now a department in the Energy Ministry responsible for the maintenance of strategic petroleum stocks. BOST, GOIL and the GNPC were scheduled for privatization as part of the IMF-sponsored structural adjustment program.

NATURAL GAS

Natural gas was first discovered in the Cape Three Points Basin in 1974. Ghana has total estimated natural gas reserves of 840 billion cubic feet (bcf). This gas is primarily located in the Tano fields. The GNPC has continued exploration and appraisal on the Tano fields, and has deemed that the natural gas reserves are suitable for electricity generation. Current Tano gas reserves are estimated to be sufficient to supply fuel to power a 100-140 megawatt (MW) power plant for a period of 15-20 years.

The Tano Fields Development and Power Project (TFDPP) was established to help meet the country's growing demand for power. TFDPP is separated into two distinct portions: offshore field development and onshore power generation. TFDPP's offshore portion will consist of the drilling of eight oil and gas wells on the Tano fields, installation of platforms and process facilities, construction of pipelines and hydrocarbon-gathering systems and construction of an onshore production facility. GNPC also plans to maximize oil production at the TFDPP by utilizing horizontal drilling technology. Power will be generated by barge-mounted turbine generators fired by gas produced by TFDPP. Initial capacity of 134 MW is planned, but if additional and sufficient gas reserves are discovered, another 134-MW barge will be constructed. Total cost of TFDPP is estimated to be $450-$500 million.

In April 1999, an agreement was signed by the governments of Cote d'Ivoire and Ghana with the UK government and Penspen for a feasibility study to build a gas pipeline between Cote d'Ivoire and Ghana. The UK Department of Trade and Industry has said it will share the cost of the study with Penspen. The pipeline would run from Abidjan to Takoradi (Aboadze) in Ghana, which is the location of a power plant currently fueled by light oil. Construction of the pipeline is estimated to take 15-18 months. The possibility of connecting the line to the proposed West Africa Gas Pipeline (WAGP) is being studied.

In August 1998, a consortium of Chevron, Shell, Nigerian National Petroleum Corporation (NNPC), GNPC, Societe Beninoise de Gaz (SoBeGaz), and Societe Togolaise de Gaz (SoToGaz) signed an agreement commissioning a feasibility study on WAGP. On August 11, 1999, in Cotonou, Benin, the four countries and the consortium signed a Memorandum of Understanding establishing the legal framework for the WAGP. The Joint Venture Agreement naming Chevron as the WAGP project manager was signed on August 16, 1999 in Abuja, Nigeria. In April 2001, the government transferred GNPC's stake in the WAGP to the Volta River Authority (VRA), the parastatal electric utility responsible for generation and transmission. It was reported that Chevron inquired about purchasing the GNPC's equity stake in the WAGP, but the government indicated that it would retain its share. The WAGP will traverse 620 miles (1,033 kilometers) both on and offshore to its final planned terminus at Effasu in Ghana. Initial plans call for the $400-million WAGP to transport 120 million cubic feet per day (Mmcf/d) of gas beginning in 2003. Gas deliveries are expected to increase to 150 Mmcf/d in 2005, 210 Mmcf/d in 2010 and be 400 Mmcf/d by the end of 2020. Construction on the WAGP, originally slated to begin in 2001, has been delayed. Construction will most likely commence in 2002, after the detailed engineering study and the environmental impact assessment are completed.

ELECTRICITY

Ghana has installed electric generation capacity of 1.2 gigawatts. The vast majority of Ghana's generation capacity is hydroelectric, with major facilities located at the Akosombo (912 MW) and Kpong (160 MW) dams. Thermal generation facilities are located at Tema and Takoradi. The VRA is responsible for generation and transmission of electricity throughout Ghana. Established in 1961, the VRA handles the distribution of electricity in northern Ghana through its Northern Electricity Department (NED) subsidiary. VRA's transmission system consists of nearly 1,242 miles (2,000 kilometers) of domestic lines. The Electricity Company of Ghana (ECG) handles the distribution of electricity in Ghana, excluding areas serviced by NED. ECG was originally incorporated in 1967, and became wholly owned by the government in 1997. The Ghanaian government aims to reduce the country's dependence on hydropower, as past droughts have led to severe power shortages, through the installation of 400 MW of replacement power from both diesel and gas turbine generators. In an effort to increase the capacity of existing generating infrastructure, the VRA is renovating the Akosombo Dam turbines with support from the World Bank. The renovation is expected to increase the capacity of the plant by 15% within five years.

In November 2000, CMS Energy Corporation (CMS) and VRA achieved commercial operation of the second of two 110-MW, light crude oil-fueled combustion turbine generators. Commercial operation of the first unit began in March 2000. The installation of the generators completed the second development phase of the Takoradi power plant. CMS operates the facility with 90% ownership and sells its output to VRA under a long-term agreement. VRA holds 10% interest with the option to increase its ownership to a maximum 50%. A steam-powered turbine, which will transform the facility into the combined-cycle format, will be added to boost the facility's capacity to the planned 330 MW. The facility has the capability to be converted to natural gas when supplies become available.

In November 1999, Spanish power utility Union Fenosa reached an agreement with the ECG to develop an electrical project that will improve the electricity supply in the industrial region near Tema. The project consists of building a 30-MW, co-generation facility adjacent to the TOR refinery and improving the distribution network in the area. The plant will be fired by residual fuel oil from TOR, and electricity generated will be sold to ECG. Steam produced at the facility will be used by the refinery. Union Fenosa, which has a 51% stake in the project, had originally planned for an 80-MW facility, but the government has established plans to double the plant's size and utilize gas when the WAGP begins operations.

In January 2000, the U.S. Trade and Development Agency (TDA) approved a $165,000 loan that covers 50% of a feasibility study for the construction of a gas turbine power station at Esiama, in western Ghana. The proposed 150-MW, combined cycle power plant will be operated by ARS Ghana Ltd., an affiliate of the U.S. utility ARS International. The feasibility study is due to be completed by the end of 2001.

A consortium of American and Japanese firms plan to build a 220-MW power station in Tema. KMR Power (operator), EPDL, and Japan's Marubeni Corporation are to build, own and operate the $200-million facility. The facility is scheduled to begin operation utilizing oil, and switching to gas supplied by Chevron when the WAGP is completed. The Ghanaian-mining firm Ashanti Goldfields (AG) was to purchase nearly half of the plant's output, but AG withdrew, stating that initial costs were too high. The remainder of the power was to be purchased by ECG.

The Ghanaian government is considering additional hydroelectric projects to be built on a Build Operate Transfer (BOT) financing scheme. The government is negotiating with a consortium led by the U.K.'s-Brown and Root on a $700-million, hydroelectric project located at Bui on the Black Volta. The Bui project would have a generation capacity of 400 MW. In addition to increasing the domestic electricity supply, power generated from Bui could be exported to Burkina Faso, Mali and Cote

d'Ivoire. A second BOT facility, located on the Pra River, would have total generating capacity of 125 MW. While environmentalists and energy experts argue that construction of additional dams is not the answer to meeting Ghana's energy requirements, the government says it would provide a more constant and adequate supply of electricity. Several groups are pushing for the government to develop micro-hydro projects along Ghana's smaller rivers. Micro-hydro projects would still provide the needed power and irrigation, but would be less damaging to the environment and local communities.

Ghana is a leading proponent of the development of the West African Power Pool (WAPP). The WAPP was formed by an agreement between Economic Community of West African States (ECOWAS) Energy Ministers in November 1999. Although the formal structure and operational agreements for the pool have yet to be determined, It is envisioned that the WAPP will interconnect the power networks of all the mainland ECOWAS nations. The VRA maintains interconnections with Togo and Benin to the east, Cote d'Ivoire to the west, and Burkina Faso to the north.

Ghana is continuing efforts to expand power access to its citizens, and several electrification programs are being undertaken. In June 1999, the European Development Fund approved a 10-million Euro loan to assist with the completion of Ghana's electrification by 2020. In July 2001, the Chinese government offered Ghana's Ministry of Mines and Energy a $29-million loan for the electrification of 106 resettlement towns along the Volta Lake. The loan represents 90% of the total cost of the project. Ghana also is pursuing rural electrification projects that utilize renewable energy. In March 1999, the Spanish firm Elecnor was awarded a contract to electrify nearly 60 towns in northeastern Ghana utilizing solar energy. Shell and the Ministry of Mines and Energy are developing a project that would use sawdust and other timber waste to generate electricity. A project to provide solar-powered electricity to communities in northern Ghana is being funded by the Ghanaian government, the United Nations Development Program, and the U.S. Department of Energy's National Renewable Energy Laboratory. The project's goal is to demonstrate the economic viability and sustainability of energy services to rural (off-grid) communities.

The government plans to proceed with its plans to privatize ECG and restructure VRA, but each company's massive debt may hinder the process. In May 1999, it was estimated that fraudulent connections and other malpractices cost the ECG 70 billion cedis annually. The company also attributed the debt to growing operating and maintenance costs that it cannot pass on to consumers since electricity tariffs have not been adjusted since 1998. VRA is in a similar predicament. VRA owes 34 million cedis to Cote d'Ivoire for power it imports during peak periods and it owes several million cedis to commercial banks for fuel used at the Tema and Takoradi plants. The ECG owes 325 billion cedis to VRA. In April 2001, the Public Utilities Regulatory Committee (PURC) authorized a 103% increase in electricity rates, but this was well below the 400% increase ECG and VRA were seeking from PURC.

Sources for this report include: Africa Energy Intelligence; Africa News Service (AllAfrica.com); BBC Summary of World Broadcasts; CIA World Factbook 2000; Deutsche Presse-Agentur; Dow Jones News Wire Service; Economist Intelligence Unit ViewsWire; Financial Times African Energy; Oil and Gas Journal; Hart's Africa Oil and Gas; International Monetary Fund; Janet Matthews Information Services (Quest Economic Database); Korea Herald; Oil & Gas Journal; Pan African News Agency (All Africa.com); PR Newswire; Reuters News Wire; U.S. Energy Information Administration; U.S. Department of State; Washington Post; Washington Times; WEFA Middle East & Africa Economic Outlook; World Bank; World Markets Online; Xinhua

COUNTRY OVERVIEW

President: John Agyekum Kufuor
Vice President: Alhaji Aliu Mahama
Independence: March 6, 1957 (from United Kingdom)
Population (July 2001E): 19.9 million
Location/Size: Western Africa, bordering the Atlantic Ocean, between Cote d'Ivoire (on the west);

Togo (on the east); and Burkina Faso (on the north)/238,540 square kilometers (92,076 square miles), slightly smaller than Oregon
Major Cities: Accra (capital), Kumasi, Tamale, Tema
Languages: English (official), over 100 native languages (including Akan, Ewe, Ga, Nzema, Dagbane, and Kasena)
Ethnic Groups: Five major ethnic groups (Akan, Ewe, MoleDagbane, Guan, and Ga-Adangbe)
Religion: Traditional beliefs 38%, Muslim 30%, Christian 24% other 8%
Defense (August 1998E): Army (7,000), Navy (5,000), Air Force (1,000), Presidential Guard (800)

ECONOMIC OVERVIEW

Minister of Finance: Yaw Osafu-Marfo
Minister of Economic Planning & Regional Cooperation: Kwesi Nduom
Currency: Cedi (C)
Market Exchange Rate (7/20/01): US$1 = 7,229 C
Gross Domestic Product (GDP) (2000E): $4.9 billion
Real GDP Growth Rate (2000E): 1.0% **(2001F):** 3.5%
Inflation Rate (2000E): 25.2% **(2001F):** 27.7%
Current Account Balance (2000E): -$0.5 billion **(2001F):** -$0.2 billion
Major Trading Partners: United Kingdom, United States, Germany, Nigeria, Togo
Merchandise Trade Balance (2000E): -$0.9 billion **(2001F):** -$0.7 billion
Merchandise Exports (2000E): $1.9 billion **(2001F):** $2.3 billion
Merchandise Imports (2000E): $2.8 billion **(2001F):** $3.0 billion
Major Export Products: Gold, cocoa, timber
Major Import Products: Petroleum, machinery and transport equipment, food, consumer goods, intermediate goods
Total External Debt (2000E): $7.1 billion

ENERGY OVERVIEW

Minister of Energy: Albert Kan-Dapaah
Proven Oil Reserves (1/1/00E): 16.5 million barrels
Oil Production (2000E): 7,000 barrels per day (bbl/d)
Oil Consumption (2000E): 31,000 bbl/d
Net Crude Oil Imports (2000E): 24,000 bbl/d
Refining Capacity (1/1/01E): 45,000 bbl/d
Natural Gas Reserves (1/1/00E): 840 billion cubic feet (bcf)
Natural Gas Production/Consumption (1999E): None
Coal Consumption (1999E): 3,000 short tons
Electric Generation Capacity (1/1/99E): 1.2 gigawatts
Electricity Generation (1999E): 5.5 billion kilowatthours (nearly all hydroelectric)

ENVIRONMENTAL OVERVIEW

Minister of Environment, Science, & Technology: Dominic Fobih
Total Primary Energy Consumption (1999E): 0.11 quadrillion Btu* (<0.1% of world total energy consumption)
Energy-Related Carbon Emissions (1999E): 1.2 million metric tons of carbon (<0.1% of world total carbon emissions)
Per Capita Energy Consumption (1999E): 5.5 million Btu (vs U.S. value of 355.8 million Btu)
Per Capita Carbon Emissions (1999E): 0.06 metric tons of carbon (vs U.S. value of 5.5 metric tons of carbon)
Energy Intensity (1999E): 12,501 Btu/ $1990 (vs U.S. value of 12,638 Btu/ $1990)**
Carbon Intensity (1999E): 0.13 metric tons of carbon/thousand $1990 (vs U.S. value of 0.19 metric tons/thousand $1990)**
Sectoral Share of Energy Consumption (1998E): Industrial (29.9%), Transportation (13.2%), Residential (56.5%), Commercial (0.4%)
Sectoral Share of Carbon Emissions (1998E): Transportation (63.2%), Industrial (20.3%),

Residential (14.7%), Commercial (1.8%)
Fuel Share of Energy Consumption (1999E): Oil (56.5%), Natural Gas (0.0%), Coal (0.1%)
Fuel Share of Carbon Emissions (1999E): Oil (99.8%), Natural Gas (0.0%), Coal (0.2%)
Renewable Energy Consumption (1998E): 235 trillion Btu* (6% increase from 1997)
Number of People per Motor Vehicle (1998): 143 (vs U.S. value of 1.3)
Status in Climate Change Negotiations: Non-Annex I country under the United Nations Framework Convention on Climate Change (ratified September 6th, 1995). Not a signatory to the Kyoto Protocol.
Major Environmental Issues: Recent drought in north severely affecting agricultural activities; deforestation; overgrazing; soil erosion; poaching and habitat destruction threatens wildlife populations; water pollution; inadequate supplies of potable water.
Major International Environmental Agreements: A party to Conventions on Biodiversity, Climate Change, Desertification, Endangered Species, Environmental Modification, Law of the Sea, Nuclear Test Ban, Ozone Layer Protection, Ship Pollution, Tropical Timber 83, Tropical Timber 94, Wetlands and Whaling. Has signed, but not ratified, Marine Life Conservation.

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar and wind electric power. The renewable energy consumption statistic is based on International Energy Agency (IEA) data and includes hydropower, solar, wind, tide, geothermal, solid biomass and animal products, biomass gas and liquids, industrial and municipal wastes. Sectoral shares of energy consumption and carbon emissions are also based on IEA data.
**GDP based on EIA International Energy Annual 1998

OIL AND GAS INDUSTRIES
Organization: Upstream - Ghana National Petroleum Company (GNPC), Refining - Tema Oil Refinery Company (TOR), Marketing and Distribution - Ghana Oil Company (GOIL)
Major Oil Fields: Saltpond
Major Gas Fields: South Tano, North Tano
Major Refineries (1/1/01 Capacity): Tema Oil Refinery - Tema (45,000 bbl/d)
Foreign Oil Company Involvement: Anadarko Petroleum Corp., Chevron, Dana Petroleum, Devon Energy, Engen, ExxonMobil, Fusion Oil, Hunt Oil, Korean National Oil Corp., Nuevo Energy, Royal Dutch/Shell, SK Corp., TotalFinaElf, Unipetrol

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Links

For more information on Ghana, see these other sources on the EIA web site:
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Links to other sites:
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U.S. State Department's Consular Information Sheet - Ghana
U.S. State Department: 2000 Human Rights Report: Ghana
U.S. State Department's Country Commercial Guide - Ghana
Library of Congress Country Study on Ghana
U.S. Trade with Ghana - 1998
U.S. State Department Background Notes on Ghana
U.S. Geological Survey - Africa and Middle East Mineral Information

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Ghana National Petroleum Corporation
Volta River Authority
Volta River Authority (Unofficial Site)
Ghana Investment Promotion Center
Divestiture Implementation Committee
Mbendi Information Service - Ghana's oil and gas industry
Africa New Service: Ghana
Washington Post World Reference: Ghana
University of Pennsylvania African Studies: Ghana
African Development Bank: Ghana
Strategic Road: Ghana
Amnesty International Annual Report 1998: Ghana
Tradeport Trade Directory: Ghana
International Energy Agency (IEA): Key Energy Indicators for Ghana
Inernational Finance Corporation (IFC) Fact Sheet: Ghana
Economic Community of West African States (ECOWAS)
Organization of African Unity (OAU)

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